

Original Article

Generative Artificial Intelligence (GenAI) Competence and Digital Leadership as Pathways to Teacher Performance

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Abstract. Artificial Intelligence (AI) is here to stay. Its rapid advancement has redefined various aspects of modern life, including education. The integration of AI in education has transformed how teachers teach, how students learn, and how leaders lead. This study examined the relationships between Generative Artificial Intelligence (GenAI) competence and teachers' performance, specifically the mediating effect of digital leadership practices (DLP) in school and the moderating effects of professional profile variables. The study also proposed the GenAI -DLP Pathways Design. Using a cross-sectional survey method with descriptive-correlational and regression-based procedural analysis, the study administered a survey questionnaire to a stratified sample of 221 private secondary school teachers. Results revealed that teachers possess a high level of GenAI competence ($M = 4.17$, "Competent") and demonstrate very satisfactory performance ($M = 4.45$). Statistical analysis confirmed strong positive relationships between GenAI competence and teacher performance ($r(220) = .733, p < .01$), between GenAI competence and digital leadership practices in school ($r(220) = .752, p < .01$), and between digital leadership practices in school and teacher performance ($r(220) = .744, p < .01$). Notably, digital leadership practices in school partially mediated relationship between GenAI competence and teacher performance, accounting for 45.601% of the total effect ($\beta = 0.286, p < .001$), while the profiles showed no significant moderating effect. These findings supported the proposed GenAI Competence - Digital Leadership Pathways design, which underscores the necessity of aligning individual GenAI skills with institutional leadership to enhance teacher performance.

Keywords: Digital leadership practices in school; Generative artificial intelligence (GenAI) competence; Pathways design; Teacher performance.

Artificial Intelligence is actively reshaping education, redefining the competencies teachers need and the leadership schools must provide. This transformation is driven by the Fourth Industrial Revolution (IR 4.0), characterized by the rapid integration of physical and digital technologies, with artificial intelligence (AI) at its forefront. As education systems worldwide respond to the demands of the Fourth Industrial Revolution, Education 4.0 has emerged as a transformative framework that aligns education with digital, intelligent, and personalized learning. This paradigm emphasizes developing competencies in artificial intelligence, critical thinking, collaboration, and innovation required for 21st-century teaching and learning.

Nonetheless, failing to adapt existing educational programs quickly enough to address these changes might

exacerbate the Global Achievement Gap (GAG), which, as Tony Wagner (2008) notes, persists between the output of existing educational programs and the skill set needed in the contemporary world. Closing the GAG requires not only curriculum reform but also ensuring educators have the knowledge to incorporate new technologies, such as Generative AI, into teaching.

Artificial intelligence (AI) is a reality and here to stay. Its rapid evolution has revolutionized many aspects of our world today. Education, too, has undergone significant transformations with the introduction of AI. Teachers, learners, and administrators have all had much to gain from this shift. One area of AI that has made waves is Generative AI (GenAI). According to Harvard University Information Technology (2023), Generative AI refers to an area of artificial intelligence capable of learning from and copying large datasets to generate original content in the form of text, images, audio, videos, code, among others, depending on prompts, patterns, and structures available in the data.

Because these technologies are becoming so prevalent, education managers and educators now need to embrace change and become competent in integrating these innovations into their teaching and educational practices. This requirement stems from mandates arising from both constitutional and policy-making actions. For instance, the Department of Education (DepEd) has emphasized the responsible use of AI to improve the learning capabilities of teachers and learners. To augment its mandate, DepEd, in collaboration with the Asian Ministers of Education Organization (SEAMEO), has established the Education Center for AI Research (ECAIR). The institution's main objective is to create innovations by conducting research and building capacity to apply AI technology in education. In addition, the introduction of the Artificial Intelligence Education Act of 2025 (HB 2186) and the development of EDCOM II under RA 11899 show how digital transformation and AI integration lead to the acquisition of 21st-century competencies.

However, despite recent advancements and greater accessibility and broader possibilities for using such technology, one clear deficiency remains: teachers' competence in using generative AI within educational settings. This highlights the importance of preparing educators not only with the skills but also with the right pedagogical mindset to use AI as a tool to enhance instruction. From this perspective, Generative AI Competence becomes a vital skill for modern educators.

Gaining proficiency in Generative AI competencies is highly significant for numerous reasons. Mulyani et al. (2025) discussed how GenAI increases teacher effectiveness by enhancing the user-friendliness, usefulness, and learning aspects of teaching. Teachers' perceptions of the AI tool will determine how they use it to teach, prepare study materials, and improve their teaching practices. Education at Illinois (2023) also noted that AI could help teachers reduce administrative tasks, allowing them to develop interpersonal skills and nurture learners' social and emotional abilities. They could customize learning to learners' specific needs, increasing access, improving curriculum effectiveness, and identifying weaknesses. Consequently, several studies link teacher effectiveness to the ability to incorporate digital tools in the classroom. This includes instruction quality, pedagogy, management, and assessments. Hence, teachers cannot take competency in Generative AI lightly.

Digital leadership practices in schools are a key aspect of this research because they focus on the whole-school community's potential to lead digital transformation using technologies such as machine learning, automation, NLP, and big data analytics. Another aspect to consider is the definition of digital leadership in the Age of AI Strategies for Business Growth and Innovation (BITS, 2022), which states that digital leadership related to artificial intelligence involves efforts to cultivate a mindset in which technology is viewed as an instrument for attaining organizational objectives. Thus, this study examined how digital leadership practices in schools and teachers' profiles influence the relationship between GenAI competence and performance.

While research on digital literacy and educational technology is growing, studies specifically addressing generative AI competence among teachers remain scarce, especially in the Philippine context. Thus, this gap underscores the need for further study to understand the dynamics between Generative AI competence and teacher performance, potentially moderated by professional profile and mediated by digital leadership practices in school. Ultimately, this study was conducted to 1) determine the professional profile of the respondents, the levels of GenAI competence, digital leadership practices in school, and teachers' performance; 2) examine relationships between and across variables; 3) test the mediating role of digital leadership practices and the moderating effect of professional profile variables; and 4) propose a pathway model, aligning teacher

competencies demanded by the digital age and envisioned to guide teachers in cultivating GenAI competence, reflective digital practice, and performance excellence – ensuring that teachers not only survive but thrive in the digital age of education.

Methodology

Research Design

This study used a cross-sectional survey design with descriptive-correlational and regression-based analyses to examine the relationships among teachers' Generative Artificial Intelligence (GenAI) competence, digital leadership practices in school (DLP), and teacher performance, including the mediating effects of DLP and the moderating effects of selected profile variables. A cross-sectional survey method collected data from respondents at a single point in time, allowing the researcher to analyze existing conditions and relationships among variables without manipulation. The descriptive-correlational approach identified systematic relationships among variables, while regression-based analysis determined explanatory pathways through mediation and moderation.

Participants and Sampling Technique

This study involved a stratified sample of 221 private secondary school teachers from ten (10) PEAC-accredited schools in Quezon's 2nd Congressional District. The study included private secondary school teachers in secondary schools within the Second District of Quezon Province who were actively teaching and integrating AI during the study. The study excluded school administrators, non-teaching personnel, elementary teachers, and teachers employed outside the Second District of Quezon Province.

The Second Congressional District of Quezon served as the research locale because it offers relatively uniform educational contexts, where comparable policy frameworks, leadership practices, and technology integration initiatives guide schools. The focus on private secondary educational institutions is deliberate, as these schools often have limited access to formal training programs and policy in artificial intelligence integration compared to their public-school counterparts, which benefit from professional development opportunities offered by the Department of Education (DepEd). The stratified sampling technique was selected to acknowledge and control potential variations within the population, ensure appropriate representation across key subgroups, and provide statistical power for the moderation analysis, which examines how different teacher profile variables influence the relationship between teachers' GenAI competence and performance.

Research Instrument

Data were collected using a four-part adapted questionnaire. The first section determined the respondents' professional profiles. The second section measured GenAI competence, adapted from the Teachers' AI Competency Self-Efficacy (TAICS) scale of Chiu et al. (2024) and the UNESCO AI Competency Framework, covering dimensions of human-centered mindset, GenAI knowledge, GenAI pedagogy, GenAI ethics, GenAI assessment, and GenAI professional engagement. The third section assessed digital leadership practices in school, adapted from Subade (2024) and Akhmad (2025). The fourth section evaluated teacher performance, aligned with the Philippine Professional Standards for Teachers (PPST) and Gepila (2020). To ensure validity and reliability, the instrument underwent expert validation by five (5) educational management experts, two (2) educational technology experts, and two (2) language experts, followed by a pilot test, with reliability established through Cronbach's Alpha.

Data Gathering Procedure

Data gathering underwent pre-data gathering, actual data gathering, and post-data gathering. During the pre-data gathering phase, the researchers secured permissions and approvals and completed instrument validation and pilot testing. The actual data-gathering phase covered questionnaire administration through face-to-face interviews and distribution to selected respondents. In the post-data gathering phase, responses were organized, coded, and analyzed using statistical tools. Frequency and Percentage were used to describe profile variables, while Mean and Standard Deviation determined the levels of GenAI competence, digital leadership practices, and teacher performance. Pearson product-moment correlation (r) was used to examine the relationships among the variables, and multiple regression was employed to test mediation and moderation effects. The study upheld ethical standards through informed consent, confidentiality, and compliance with the Data Privacy Act of 2012.

Ethical Considerations

Throughout all phases, the researcher strictly observed ethical considerations. The researcher obtained informed consent from all respondents, ensuring they fully understood the study's goals, procedures, potential risks, and their right to withdraw at any time. The study used or adapted existing instruments and obtained consent from the original authors. Participants' privacy and all acquired data were securely preserved. The study adhered to the Data Privacy Act of 2012 to protect respondents' personal information. The study used APA-format citations to support ethical processes and documented them in the references section.

Results and Discussion

Professional Profile of the Respondents

This section presents the respondents' professional profile in terms of person-related profile, work-related profile, and performance rating. The person-related profile includes age, sex, and educational attainment, while the work-related profile includes designation, years in service, GenAI seminar and training focus and level, and Digital Leadership Practices seminar and training focus and level.

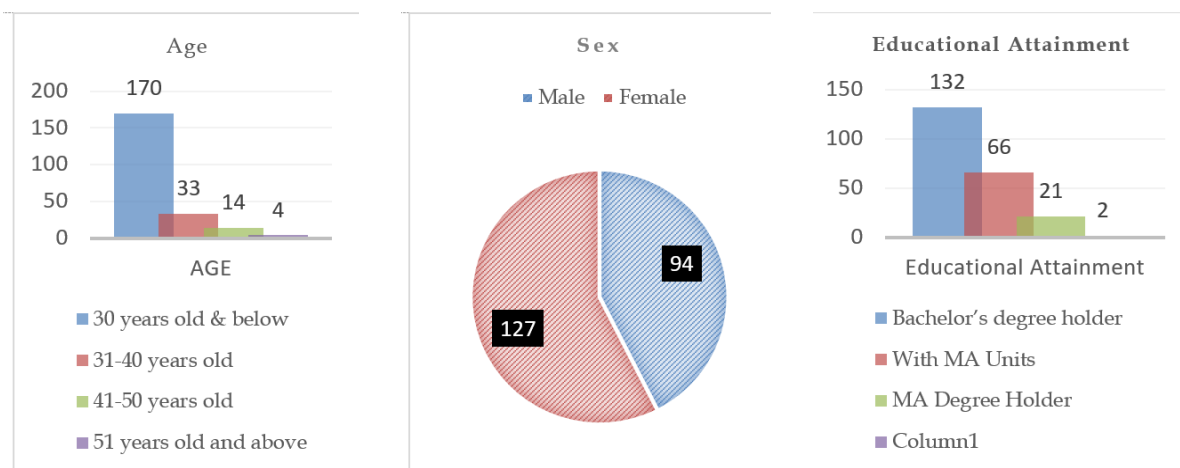


Figure 1. Personal Profile of the Respondents in terms of Age, Sex, and Educational Attainment.

Figure 1 shows the personal profile of the respondents in terms of age, sex, and educational attainment. The data show that most respondents are female, comprising 127 private school teachers, or 57.5%, while 94 respondents, or 42.5%, are male. This finding indicates that the teaching profession in the participating private schools is female-dominated. Regarding technology use and digital practices in educational settings, Cai et al. (2017) found that men show more positive attitudes toward technology acceptance than women, particularly in their belief in technology's societal value and self-efficacy. However, the difference was small. This suggests the gender gap in attitudes toward technology is narrowing.

In terms of Age, the data show that most respondents are 30 years old and below, accounting for 170 teachers, or 76.9% of the total respondents. In contrast, the smallest group is 51 years old and above, with only 4 respondents (1.8%). These results indicate that the teaching workforce in the participating private schools is predominantly young. This may suggest that schools have a relatively young, emerging professional workforce that may be more adaptable to new technological innovations such as Generative Artificial Intelligence (GenAI) and digital leadership practices in schools.

Supporting this interpretation, Zhang and Villanueva (2023) noted that 21–30-year-old teachers demonstrated higher digital competence. Likewise, Berber et al. (2023) reported outstanding competence among 21–27-year-olds. Al-Riyami et al. (2023) found that for faculty members under 46 years old, social influence significantly affected their behavioral intention to use 4IR-related technologies such as AI. However, Mah and Groß (2024) identified age-related differences, with younger groups expressing lower positive perceptions of AI than some older counterparts; those under 30 rated it lower than older groups.

Figure 2 shows that the largest group of respondents are bachelor's degree holders, representing 132 teachers, or 59.7% of the total respondents. The smallest group consists of those with doctoral units, accounting for 2 respondents (0.9%). These findings indicate that while most teachers have obtained the minimum academic qualification required for teaching, a considerable proportion are pursuing graduate-level studies, particularly at the master's level, suggesting their engagement in continuing professional development to enhance their competencies and career advancement. This observation is consistent with the emphasis on professional growth among educators. According to Gepila (2020), the adoption and implementation of the new Philippine Professional Standards for Teachers recognize the importance of professional standards in the continuing professional development and advancement of teachers based on the principle of lifelong learning, which refers to the systematic acquisition and upgrade of knowledge, skills, and attitude, and promotes self-directed learning.

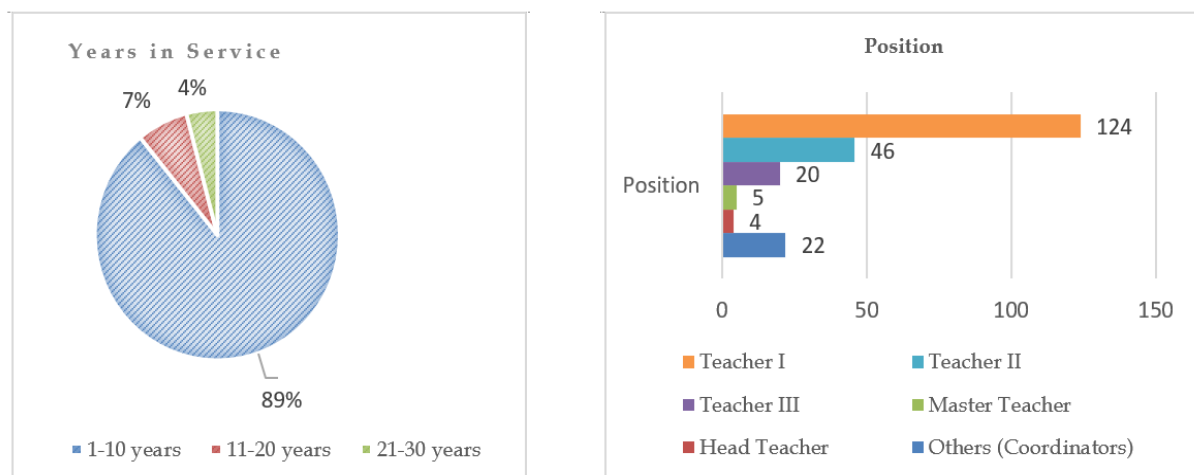


Figure 2. *Work-Related Profile of the Respondents in terms of Designation/Position and Years of Service*

Figure 2 displays the work-related profile of the respondents in terms of designation and years of service. Most respondents are Teacher I, accounting for 124 respondents (56.1%). This is followed by Teacher II (46 respondents, 20.8%) and Teacher III (20 respondents, 9.0%). A smaller proportion of respondents are coordinators (10.0%), while Master Teachers (2.3%) and Head Teachers (1.8%) comprise the smallest groups. The predominance of teachers in entry-level teaching positions suggests that most respondents are classroom teachers primarily engaged in direct instructional responsibilities. This finding reflects the presence of many beginning teachers in the teaching workforce. According to Gepila (2020), Beginning Teachers - those who have gained the qualifications recognized for entry into the teaching profession - have a strong understanding of the subjects/areas in which they are trained in terms of content knowledge and pedagogy. They possess the requisite knowledge, skills, and values that support the teaching and learning process.

Figure 2 also shows that most respondents have 1-10 years of teaching experience, representing 197 teachers, or 89.1%. This is followed by 15 respondents (6.8%) with 11-20 years of service, and 9 respondents (4.1%) with 21-30 years of teaching experience. These results indicate that most respondents are relatively early in their teaching careers, aligning with the earlier finding that most respondents are relatively young. Teachers with fewer years of experience may be more open to adopting emerging technologies and innovative instructional strategies, including using GenAI in teaching and learning processes. Regarding the role of teaching experience in professional competence, Gepila (2020) highlighted that the number of years teachers have in the field may or may not reflect teaching competency, depending on how teachers manage their careers and professions effectively throughout their service. Although it is commonly understood that seasoned teachers are better than novice ones in content knowledge and pedagogy, learning environment, diversity of learners, curriculum and planning, assessment and reporting, community linkages and professional engagement, and personal growth and professional development.

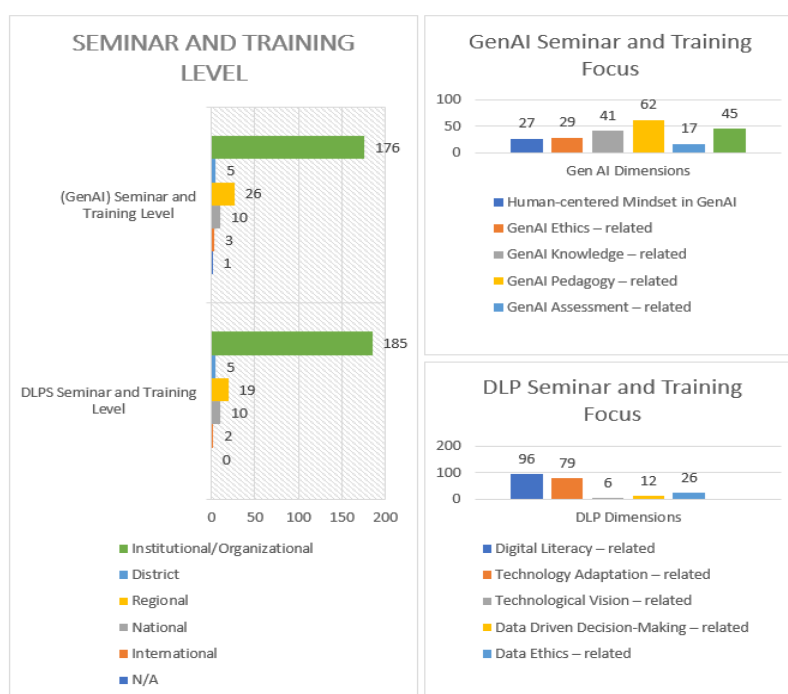


Figure 3. Work-Related Profile of the Respondents in terms of Generative Artificial Intelligence (GenAI) and Digital Leadership Practices in School (DLP) Seminar and Training Level and Focus

Figure 3 presents the work-related profile of the respondents in terms of the levels and focus of GenAI and digital leadership training and seminars they attended. As shown in Figure 3, most respondents have attended institutional- or organizational-level GenAI seminars and training, with 176 respondents, or 79.6%. In contrast, only 3 respondents (1.4%) have participated in international-level training. These findings suggest that most teachers have received basic exposure to GenAI-related professional development within their respective institutions or organizations. This aligns with the broader perspective on teacher development challenges. Wagner (2008) frames the "teacher development challenge" by highlighting the profound need for educators to acquire new competencies and adopt fundamentally different instructional practices in response to rapid global changes [GAG: The urgent need for educators to adapt to the modern world; Teacher development as the core GAG problem].

Figure 3 also shows that most respondents have attended institutional- or organizational-level digital leadership practices, accounting for 185 respondents (83.7%). In contrast, only 2 respondents (0.9%) have participated in international-level training. These results suggest that digital leadership practices are primarily being developed through institution-based professional development initiatives. This finding is consistent with the role of digital leaders in supporting teacher competencies. According to Acebuche (2024), digital leaders must enable continuing professional development programs for teachers to improve their digital literacy and expertise. They ensure teachers are well equipped to use technology effectively in the classroom.

As shown in Figure 3, the most common focus of GenAI-related seminars and training attended by respondents is GenAI pedagogy-related training, with 62 respondents (28.1%). The least represented focus is GenAI assessment-related training, with 17 respondents (7.7%). This distribution suggests that GenAI-related professional development programs have primarily emphasized AI's pedagogical applications in teaching and learning. This emphasis aligns with current perspectives on teacher competencies and the demands of Education 4.0. Teachers must strengthen their pedagogical and technological competencies to design learning environments where students can collaboratively solve authentic problems using AI (Ng et al., 2023). Moreover, the rise of the Education 4.0 paradigm requires redesigning the teaching-learning processes to meet the paramount and multifaceted demands of the digital era. As Karakose & Tulubas (2023) note, the second premise of Education 4.0 is that new pedagogies must be developed to equip students with the skill set they will need during or beyond the Industry 4.0 era.

Additionally, the most common focus of Digital Leadership-related seminars and training attended by respondents is Digital Literacy-related training, with 96 respondents (43.4%). The least represented focus is Technological Vision-related training, with 6 respondents (2.7%). This distribution suggests that professional development programs related to Digital Leadership Practices have primarily emphasized strengthening digital literacy among school leaders and teachers. This focus aligns with the evolving role of educational leadership in the digital age. In the digital age, educational leadership has shifted from simply providing technological infrastructure to navigating digital transformation. One priority is strengthening digital literacy as a foundation for 21st-century skills (Akhmad, 2025).

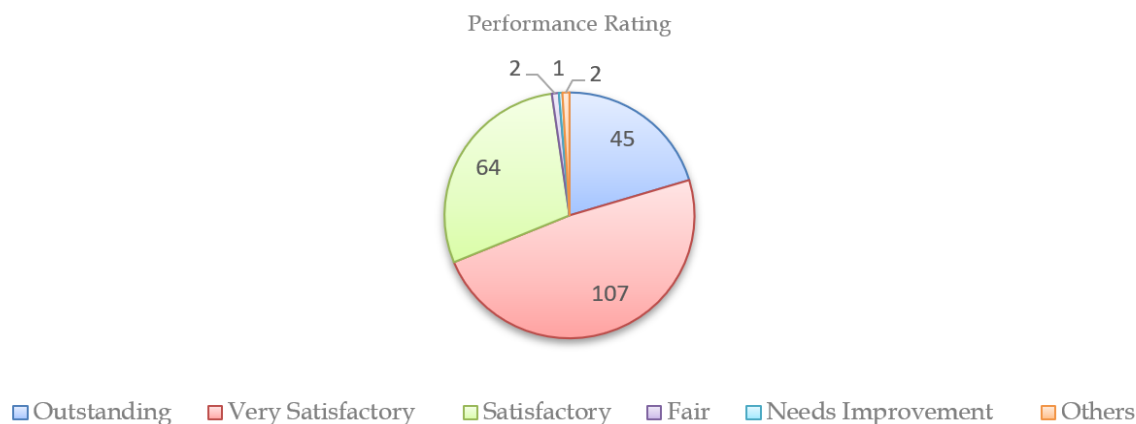


Figure 4. Profile of the Respondents in terms of Performance Rating

Figure 4 displays the respondents' profile in terms of performance rating. The data show that most respondents received a Very Satisfactory performance rating, with 107 teachers, or 48.4%. Only a small number of teachers received Fair (0.9%) and Needs Improvement (0.5%). These findings indicate that most teachers demonstrate competent and satisfactory levels of professional performance, with a notable proportion achieving outstanding performance ratings. This overall positive performance profile suggests that the respondents possess the necessary competencies and professional capabilities required for effective teaching.

This is consistent with the literature on teacher professional proficiency. According to Gepila (2020), teachers rated themselves as proficient only in using the PPST, meaning they are professionally independent in applying skills vital to the teaching and learning process. They can provide focused teaching programs that meet curriculum and assessment requirements. They display skills in planning, implementing, and managing learning programs. They actively engage in collaborative learning with the professional community and other stakeholders for mutual growth and advancement. They are reflective practitioners who continually consolidate the knowledge, skills, and practices of beginning teachers.

Teachers' Generative Artificial Intelligence (GenAI) Competence

This section presents the teachers' GenAI competence in terms of human-centered mindset, GenAI knowledge, GenAI ethics, GenAI pedagogy, GenAI assessment, and professional engagement.

Table 1. Descriptive Result for Teachers' Generative Artificial Intelligence (GenAI) Competence

	Indicator	Mean	SD	Interpretation
1.	Human-centered Mindset	4.26	.508	Competent
2.	GenAI Ethics	4.22	.570	Competent
3.	GenAI Knowledge	4.13	.591	Competent
4.	GenAI Pedagogy	4.14	.681	Competent
5.	GenAI Assessment	4.11	.656	Competent
6.	Professional Engagement	4.16	.672	Competent
	Overall Mean	4.17	.534	Competent

Note. 1.0-1.49 (Not Competent); 1.50-2.49 (Less Competent); 2.50-3.49 (Moderately Competent); 3.50-4.49 (Competent); 4.50-5.0 (Highly Competent).

The overall findings show that teachers demonstrate a high level of competence in using Generative Artificial Intelligence (GenAI) across its key dimensions. The overall mean score of GenAI competence, 4.17, with the interpretation “Competent,” indicates that teachers are generally capable of using AI technologies to support teaching and learning processes, such as lesson planning, content generation, assessment, and instructional delivery. Teachers also show awareness of the importance of maintaining human judgment when using GenAI, recognizing that these technologies should serve as supportive tools rather than replacements. Furthermore, the results suggest that teachers can use GenAI tools ethically and responsibly.

Among the GenAI competence dimensions, human-centered mindset obtained the highest mean score of 4.26, verbally interpreted as “Competent”. This suggests that teachers generally demonstrate awareness of the role of human judgment and responsibility in integrating GenAI in education. This reflects teachers’ understanding that while AI tools can support instructional processes, the crucial decision-making and evaluation of outputs must remain under human control. In practice, teachers integrate GenAI into lessons while modeling responsible use, such as showing students how to fact-check AI outputs. They balance GenAI tools with human guidance, e.g., using AI to suggest learning paths while personally shaping learning content and mentoring students in areas where AI is limited. Teachers also promote school-wide awareness of how AI can “assist” in teaching and learning, providing discussions or guide materials for both students and colleagues. Literature suggests that for AI to be effective, humans must remain central throughout the AI life cycle. Specifically, Ozmen Garibay (2023) notes that AI systems must be designed to enhance human performance while upholding values such as transparency and accountability.

However, the results also suggest areas where competence can be further strengthened. GenAI assessment obtained the lowest mean score of 4.11. Although still verbally interpreted as “Competent,” the relatively low mean suggests that transparent GenAI-assisted assessment may still be developing within educational institutions. When using GenAI-assisted grading tools, teachers show students how answers are scored and provide opportunities to discuss or contest grades. They explain to students how AI generates assessments. In some practices, teachers provide rubrics alongside AI feedback, so students understand how their performance is evaluated. The European Commission (2021) highlights that transparency in AI, particularly in assessment, grading, and student performance tracking, is critical to ensure that algorithmic decisions can be reviewed and contested by students and educators.

Taken together, the results indicate that teachers show a high level of competence in GenAI use, effectively integrating it into pedagogy and professional engagement while maintaining ethical awareness and human judgment. However, strengthening teachers’ competence in GenAI assessment may further deepen their critical awareness and responsible GenAI use in the educational context.

Digital Leadership Practices in School

This part discusses the digital leadership practices in schools in terms of digital literacy, technology adaptation, technological vision, data-driven decision-making, and data ethics.

Table 2. *Descriptive Results for Digital Leadership Practices in School*

	Indicator	Mean	SD	Interpretation
1.	Digital Literacy	4.36	.585	Moderately Practiced
2.	Technology Adaptation	4.25	.597	Moderately Practiced
3.	Technological Vision	4.23	.627	Moderately Practiced
4.	Data-Driven Decision-Making	4.13	.643	Moderately Practiced
5.	Data Ethics	4.36	.608	Moderately Practiced
	Overall Mean	4.27	.549	Moderately Practiced

Note. 1.0-1.49 (Not Practiced at All); 1.50-2.49 (Slightly Practiced); 2.50-3.49 (Somewhat Practiced); 3.50-4.49 (Moderately Practiced); 4.50-5.0 (Highly Practiced).

Table 2 presents digital leadership practices in schools. Collectively, all gathered responses on overall digital leadership practices yielded a mean of 4.27, interpreted as “Moderately Practiced.” This overall result indicates that school leaders and teachers demonstrate a high level of digital leadership practices in terms of digital literacy, technology adaptation, technological vision, data-driven decision-making, and data ethics. Overall mean scores suggest consistent application of digital literacy skills, strategic planning, resource management, and ethical technology use.

Among the indicators, the highest mean scores of 4.36 were observed in digital literacy and data ethics, both verbally interpreted as “Moderately Practiced”. This indicates that school leaders and teachers emphasize protecting digital data and maintaining secure digital infrastructures and systems, reflecting responsible digital leadership practices that prioritize the safe and secure use of technology. In practice, school administrators set up password-protected accounts, secure student data storage, and assign personnel to ensure school systems remain secure. Leaders also brief staff on safe digital practices, such as avoiding unsecured websites or unverified GenAI platforms. Furthermore, teachers follow strict protocols when uploading student work online, anonymizing data when sharing, or using AI processing. Akhmad (2025) notes that school heads are fundamentally responsible for protecting the digital rights and data security of all stakeholders, particularly students and teachers. Schools are responsible for both implementing technology effectively and protecting the digital rights and data security of all stakeholders, particularly students and teachers.

On the other hand, the results also suggest areas where competence can be further strengthened. Data-driven decision-making obtained a comparatively lower mean score of 4.13, verbally interpreted as “Moderately Practiced”. This suggests that educational technology decisions related to sustaining initiatives through adequate resource allocation may present certain challenges for schools. In practice, school heads budget for AI tools, software subscriptions, and IT support staff to keep digital initiatives running without disruption. They assign dedicated personnel to maintain computer labs, manage AI platforms, and troubleshoot technical issues. Subade (2024) highlights that schools must allocate financial and human resources effectively to maintain technology programs. They must also ensure teachers make full use of the resources at their disposal by driving technological solutions, strategic integration, and improvement measures.

Collectively, the results suggest that schools demonstrate a positive orientation toward digital literacy, technology adaptation, technological vision, and data ethics. Strengthening the allocation of financial and human resources may further enhance digital leadership practices in terms of data-driven decision-making.

Teacher Performance

This part discusses teacher performance in terms of Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, Curriculum and Planning, Assessment and Reporting, Community Linkages and Professional Engagement, and Personal Growth and Professional Development. Overall, the findings show that teachers perform at a high level across the PPST key dimensions. The overall mean score for Teacher Performance, 4.45, with the interpretation “Very Satisfactory,” indicates that teachers can meet the standards set by the Philippine Professional Standards for Teachers (PPST). The results revealed that teachers demonstrated a very satisfactory performance across the domains of the Philippine Professional Standards for Teachers (PPST), including content knowledge and pedagogy, learning environment, diversity of learners, curriculum and planning, assessment and reporting, community linkages and professional engagement, and personal growth and professional development.

Table 3. *Descriptive Results for Teacher Performance*

	Indicator	Mean	SD	Interpretation
1.	Content Knowledge and Pedagogy	4.45	.507	Very Satisfactory
2.	Learning Environment	4.50	.526	Outstanding
3.	Diversity of Learners	4.39	.490	Very Satisfactory
4.	Curriculum and Planning	4.41	.547	Very Satisfactory
5.	Assessment and Reporting	4.44	.521	Very Satisfactory
6.	Community Linkages and Professional Engagement	4.43	.537	Very Satisfactory
7.	Personal Growth and Professional Development	4.50	.535	Outstanding
	Overall Mean	4.45	.458	Very Satisfactory

Note. 1.0-1.49 (Needs Improvement); 1.50-2.49 (Fair); 2.50-3.49 (Satisfactory); 3.50-4.49 (Very Satisfactory); 4.50-5.0 (Outstanding).

Among the indicators, Personal Growth and Professional Development obtained the highest mean score of 4.50. This result indicates that teachers strongly recognize the need for continuous professional learning and reflective practice throughout their careers. In practice, teachers actively pursue new learning opportunities, including online courses, seminars, and research projects. Teachers mentor colleagues or share best practices, demonstrating commitment to both personal and professional development. Cabradilla (2025) highlighted that the level of competency of teachers, along with personal growth and professional development, is considered “Excellent competent,” as backed up by the self-ratings of the teachers and their immediate supervisor. This shows that

teachers recognize the importance of taking responsibility for personal growth and professional development for lifelong learning.

Furthermore, the Learning Environment also obtained the highest mean score of 4.50, with the interpretation “Outstanding.” This highlights that teachers strongly emphasize maintaining collaborative, motivating classroom environments where students feel encouraged to actively engage in the learning process. In practice, teachers encourage group projects and peer tutoring, fostering cooperation and student-to-student interaction. They actively motivate students, giving constructive feedback and celebrating milestones to boost confidence. Philippine Professional Standards for Teachers (PPST) explicitly state that under the Learning Environment domain, teachers must maintain supportive learning environments that nurture and inspire learners to participate, cooperate, and collaborate in continued learning. The consistency of high results suggests that teachers demonstrate very satisfactory to outstanding performance in effectively implementing teaching and learning processes in contemporary educational environments. Across dimensions of teacher performance, teachers perform outstandingly in fostering a learning environment and supporting personal growth and professional development.

Relationship Between Teachers’ Generative Artificial Intelligence (GenAI) Competence, Digital Leadership Practices in School, and Teacher Performance

Table 4 displays the significant relationship between teachers’ Generative AI Competence and Digital Leadership Practices in School. The findings reveal a strong and statistically significant relationship between teachers’ GenAI competence and digital leadership practices (DLP) in schools ($r(220) = .752, p < .01$), indicating that higher levels of GenAI competence are closely associated with stronger DLP enactment. This strong association is further supported by significant correlations between GenAI competence and key DLP dimensions, including digital literacy, technology adaptation, technological vision, data-driven decision-making, and data ethics, all showing r values of +0.6 to +0.8 at $p < .001$.

Generative AI Competence	Digital Leadership Practices in School					
	DL	TA	TV	DDDM	DE	Overall DLP
Human-centered Mindset	.594**	.583**	.572**	.479**	.508**	.608**
GenAI Ethics	.639**	.638**	.603**	.522**	.552**	.657**
GenAI Knowledge	.610**	.623**	.630**	.615**	.585**	.682**
GenAI Pedagogy	.582**	.598**	.610**	.572**	.494**	.636**
GenAI Assessment	.618**	.619**	.569**	.540**	.491**	.631**
Professional Engagement	.621**	.674**	.676**	.623**	.584**	.708**
Overall GenAI Competence	.701**	.716**	.702**	.645**	.615**	.752**

Note. DLP-Digital Leadership Practices; DL-Digital Literacy; TA-Technology Adaptation; TV-Technological Vision; DDDDM- Data Driven Decision-Making; DE-Data Ethics
 **Correlation is significant at the 0.01 level (2-tailed). Verbal Interpretation of r -value: +1.0 Perfect positive +/- association +0.8 to +1.0 Very strong
 +/- association +0.6 to +0.8 Strong +/- association +0.4 to +0.6 Moderate +/- association +0.2 to +0.4 Weak +/- association 0.0 to +0.2 Very weak
 +/- or no association

These results suggest that teachers who are more competent in GenAI are not only more digitally literate but also better able to adapt to technologies, articulate a forward-looking technological vision, use data effectively for instructional decisions, and uphold ethical standards in digital contexts. This result indicates that higher levels of GenAI competence are associated with stronger implementation of digital leadership practices. Thus, teachers with higher GenAI competence tend to enact digital leadership practices more strongly. This strong relationship is further reflected in significant correlations between GenAI competence and key digital leadership practices in schools, including digital literacy, technology adaptation, technological vision, data-driven decision-making, and data ethics, with r values ranging from +0.6 to +0.8 at $p < .001$. These results indicate that teachers with high GenAI competence tend to be digitally literate, adapt to technology, set technological vision, make data-informed decisions, and manage data ethically.

Although the findings exhibit a strong positive association between GenAI competence and digital leadership practices, the correlational nature of the study does not establish a causal relationship between the two variables. Thus, the relationship may be reciprocal, with each reinforcing the other. Teachers with higher levels of GenAI competence may be better equipped to employ digital leadership practices because they have the knowledge, skills, and confidence needed to thrive in technology-rich environments. On the other hand, schools characterized by strong digital leadership practices may also foster conditions that encourage teachers to build their GenAI

competence by providing access to digital resources, collaborative learning opportunities, and innovation-driven initiatives.

In practice, the findings suggest that strengthening teachers' GenAI competencies can serve as a powerful lever for enhancing digital leadership practices at the school level, thereby fostering a more innovative, ethical, and data-informed school culture. These results also indicate that teachers with stronger pedagogical competence in using GenAI are more likely to demonstrate greater capability in leading digital initiatives in schools. This underscores the importance of professional development programs that integrate GenAI skill-building with leadership-oriented digital practices to support sustainable school improvement and effective technology integration.

Karakose & Tulubas (2023) stated that educational leaders in the modern era need to play a crucial role in identifying the advantages of novel technologies while developing plans and strategies to address risks. In the era of Artificial Intelligence, educational leaders must be adaptable, agile, and productive, while also cultivating cooperation, critical thinking, creativity, communication, entrepreneurship, and problem-solving skills. They should also serve as digital leaders by establishing an innovative culture that supports a digitally enhanced learning community. In line with the Education 4.0 paradigm, Çetin and Karsantik (2022) highlighted that educational leaders remain in charge of establishing a vision, creating and ensuring the implementation of school improvement plans, fostering and sustaining a climate of trust, encouraging collaboration/cooperation, maintaining the communication channels open, and effectively managing the process of change.

Table 5. Correlation Between Teachers' Generative AI Competence and Teacher Performance

Generative AI Competence	Teacher Performance						
	CKP	LE	DL	C&P	A&R	CLPE	PGPD
Human-centered Mindset	.595**	.520**	.555**	.549**	.510**	.508**	.479**
GenAI Ethics	.591**	.505**	.599**	.631**	.536**	.523**	.565**
GenAI Knowledge	.650**	.517**	.588**	.587**	.518**	.489**	.537**
GenAI Pedagogy	.587**	.467**	.553**	.582**	.466**	.502**	.520**
GenAI Assessment	.601**	.530**	.603**	.611**	.567**	.517**	.538**
Professional Engagement	.628**	.537**	.649**	.651**	.575**	.590**	.615**
Overall GenAI Competence	.699**	.588**	.680**	.693**	.607**	.600**	.625**

Note. TP-Teacher Performance; CKP-Content Knowledge and Pedagogy; LE-Learning Environment; DL-Diversity of Learners; C&P-Curriculum and Planning; A&R-Assessment and Reporting; CLPE-Community Linkages and Professional Engagement; and PGPD-Personal Growth and Professional Development.

**Correlation is significant at the 0.01 level (2-tailed). Verbal Interpretation of r-value: +1.0 Perfect positive +/- association +0.8 to +1.0 Very strong +/- association +0.6 to +0.8 Strong +/- association +0.4 to +0.6 Moderate +/- association +0.2 to +0.4 Weak +/- association 0.0 to +0.2 Very weak +/- or no association

Table 5 displays the significant relationship between teachers' Generative AI Competence and Teacher Performance. The findings reveal a strong and statistically significant relationship between teachers' GenAI competence and Teacher Performance ($r(220) = .733, p < .01$), indicating that higher levels of GenAI competence are closely associated with stronger teacher performance. This strong association is further supported by significant correlations between GenAI competence and key teacher performance dimensions, including content knowledge and pedagogy, learning environment, diversity of learners, curriculum planning, assessment and reporting, community linkages and professional engagement, and personal growth and professional development, all exhibiting r values from $+0.6$ to $+0.8$ at $p < .001$. These results suggest that teachers with higher GenAI competence can enhance their instructional strategies, design effective learning activities, and use digital tools to support students' learning needs.

The study's cross-sectional design captures associations at a single point in time and therefore does not permit causal conclusions. While higher GenAI competence may be associated with improved pedagogical and professional effectiveness, highly performing teachers may also be more inclined to explore, adopt, and integrate GenAI. In practice, the findings imply that strengthening teachers' Generative Artificial Intelligence (GenAI) competence is associated with higher teacher performance across multiple professional domains, including content knowledge and pedagogy, learning environment, diversity of learners, curriculum and planning, assessment and reporting, community linkages and professional development, and personal growth and professional development, as educational institutions increasingly integrate advanced digital technologies. The results underscore the pivotal role of professional development programs and initiatives, such as structured policy development, capacity-building initiatives, and training programs focused on strengthening GenAI competence. These programs can serve as strategic interventions to enhance teachers' effectiveness and overall professional performance in technology-enriched learning environments.

Similarly, Mulyani et al. (2025) used structural equation modeling and found that generative AI competence has a significant direct effect on teaching performance. Furthermore, Akanzire et al. (2025) reported a statistically significant relationship between teachers' generative AI competence and their teaching effectiveness. This highlights the important role of generative AI in schools for supporting and enhancing teaching performance. These findings align with the view that educators recognize the professional engagement required to use GenAI appropriately, maintain ethical standards, and enhance pedagogical interactions. GenAI tools facilitate real-time feedback and personalized learning assessments, highlighting the necessity for ongoing professional development to keep pace with evolving technology in curriculum and planning.

Table 6. Correlation Between Digital Leadership Practices in School and Teacher Performance

Digital Leadership Practices in School	Teacher Performance							Overall TP
	CKP	LE	DL	C&P	A&R	CLPE	PGPD	
Digital Literacy	.704**	.656**	.636**	.645**	.622**	.532**	.607**	.718**
Technology Adaptation	.676**	.622**	.661**	.591**	.582**	.550**	.572**	.693**
Technological Vision	.642**	.582**	.636**	.614**	.593**	.580**	.616**	.696**
Data-Driven Decision-Making	.575**	.493**	.523**	.518**	.477**	.459**	.486**	.576**
Data Ethics	.665**	.541**	.593**	.565**	.556**	.549**	.609**	.665**
Overall Digital Leadership Practices	.725**	.643**	.678**	.652**	.629**	.594**	.642**	.744**

Note. TP-Teacher Performance, CKP-Content Knowledge and Pedagogy; LE-Learning Environment; DL-Diversity of Learners; C&P-Curriculum and Planning; A&R-Assessment and Reporting; CLPE-Community Linkages and Professional Engagement; and PGPD-Personal Growth and Professional Development.

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

Verbal Interpretation of r-value: +1.0 Perfect positive +/- association +0.8 to +1.0 Very strong +/- association +0.6 to +0.8 Strong +/- association +0.4 to +0.6 Moderate +/- association +0.2 to +0.4 Weak +/- association 0.0 to +0.2 Very weak +/- or no association

Table 6 presents the significant relationship between teachers' Digital Leadership Practices in School and Teacher Performance. The findings reveal a strong, statistically significant relationship between digital leadership practices in schools (DLP) and overall teacher performance, with $r = .744$, $p < .01$. This indicates that stronger DLP is associated with higher teacher performance. When school leaders and teachers actively promote digital literacy, technological innovation, and ethical data use, teachers are more likely to enhance their instructional practices and professional competencies. This strong association is further supported by significant correlations between digital leadership practices and key teacher performance dimensions, including content knowledge and pedagogy, learning environment, diversity of learners, curriculum planning, assessment and reporting, community linkages and professional engagement, and personal growth and professional development. All correlations show r values ranging from $+0.459$ to $+0.725$ at $p < .001$. These results suggest that schools that actively foster digital leadership practices enable teachers to strengthen their instructional competence, enhance pedagogical approaches, and integrate digital technologies effectively into teaching and learning processes. However, because the study used a cross-sectional research design, it cannot determine whether digital leadership practices directly lead to improved teacher performance or whether high-performing teachers help develop stronger digital leadership cultures within schools. Thus, these findings may suggest that teachers in environments with stronger digital leadership practices tend to perform better across multiple professional domains and/or that competent teachers actively contribute to advancing school-wide digital initiatives.

In practice, the findings indicate that strengthening digital leadership practices in schools can serve as a critical strategic mechanism for improving teacher performance across multiple professional domains. These results imply that when school leaders and teachers actively employ leadership practices that promote digital literacy, technological adaptation, technological vision, data-driven decision-making, and data ethics, they can help create supportive environments that empower teachers to improve their performance. Consequently, these results suggest that schools should prioritize capacity-building and professional development programs that strengthen digital leadership practices among school leaders and teachers.

Similarly, Rosa (2022) found a slight correlation between digital leadership and teachers' performance. Likewise, Nawaz et al. (2023) found a significant correlation between digital leadership competencies and teachers' performance. Based on these findings, it was concluded that digital leadership competencies had a significant correlation and effect on the respondents' performance. Similarly, Saeed & Kang (2024) found that digital leadership positively predicted performance, meaning that as digital leadership support increases, teachers' performance also increases. Digital leaders enable teachers to embrace technology, improve their digital literacy, support pedagogical innovations, develop collaboration, and create a positive digital culture through their vision, encouragement, and facilitation.

Mediation Analysis of Digital Leadership Practices in Schools on the Relationship Between Teachers' Generative Artificial Intelligence (GenAI) Competence and Teacher Performance

Table 7. Mediating Effect of Digital Leadership Practices in Schools on the Relationship Between Teachers' Generative AI Competence and Performance

Mediation Estimates								
Effect	Label	Estimate	SE	95% Confidence Interval		Z	P	%Mediation
				Lower	Upper			
Indirect	a x b	0.286	0.044	0.201	0.372	6.547	< .001	45.601
Direct	c	0.342	0.054	0.236	0.447	6.366	< .001	54.399
Total	c + a x b	0.628	0.039	0.551	0.705	16.016	< .001	100.000

Path Estimates								
			Label	Estimate	SE	95% Confidence Interval		P
						Lower	Upper	
GAIComp	□	DLPS	a	0.773	0.046	0.684	0.862	16.953
DLPS	□	Tperf	b	0.371	0.052	0.268	0.473	7.097
GAIComp	□	Tperf	c	0.342	0.054	0.236	0.447	6.366

Table 7 displays the mediating effect of digital leadership practices in schools on the relationship between teachers' generative AI competence and teacher performance. The results indicate that digital leadership practices (DLP) partially mediate the relationship between teachers' GenAI competencies and teachers' performance. The indirect effect of GenAI competencies on performance through DLP is statistically significant ($\beta = 0.286$, 95% CI [0.201, 0.372], $z = 6.547$, $p < .001$), accounting for 45.601% of the total effect, which confirms that a substantial portion of the influence of GenAI competencies operates through teachers' and schools' digital leadership practices.

At the same time, the direct effect of GenAI competencies on performance remains significant ($\beta = 0.342$, 95% CI [0.236, 0.447], $z = 6.366$, $p = .001$), representing 54.399% of the total effect, indicating partial rather than full mediation. The total effect ($\beta = 0.628$, $p < .001$) reflects a strong overall impact of GenAI competencies on teacher performance.

Consistent with this, the path estimates show that GenAI competencies strongly predict digital leadership practices ($\beta = 0.773$, $p < .001$), digital leadership practices significantly enhance teacher performance ($\beta = 0.371$, $p < .001$), and GenAI competencies also exert a direct positive influence on performance ($\beta = 0.342$, $p < .001$). Practically, these findings suggest that while individual teachers' GenAI competencies are crucial for improving performance, their impact is significantly strengthened when schools foster strong digital leadership practices. This implies that professional development initiatives should not focus solely on building individual AI skills but also on strengthening school-level digital leadership – such as vision-setting, technology-integration support, and data-informed decision-making—to translate GenAI competencies more effectively into improved teaching performance and instructional outcomes.

The findings of the present study, which indicate that digital leadership practices in school partially mediate the relationship between teachers' GenAI competence and teachers' performance, are supported by several studies. Mulyani et al. (2025) found that generative AI competence has a significant direct effect on teaching performance. Similarly, Li et al. (2024) found that Generative AI literacy positively predicted job performance. In addition, Shahzad et al. (2025) highlighted that teachers with GenAI competence better facilitate critical thinking and show stronger personal growth, leading to improved student outcomes. These results, supported by findings from several studies, indicate that higher generative AI competence is associated with better performance outcomes, highlighting the critical role of generative AI in schools in supporting and enhancing teaching performance.

However, supportive school leadership often strengthens the translation of such competence into effective instructional outcomes. In line with this, Zeng et al. (2025) found that when school leaders support professional development programs that empower teachers to integrate emerging technologies into their classes, teachers become more skilled at integrating AI into their classes. School leaders who promote innovation, improvement, and a positive school culture help teachers become more confident in integrating technology. School leaders' "digital thinking," such as empathy and agility, can create a clear vision for how technology should be used in the future. These leadership behaviors strengthen teachers' acceptance of technology and its practical application.

Overall, digital leadership significantly influences teachers' AI integration through organizational support, ethical guidance, and a supportive school culture. Taken together, these studies suggest that while teachers' GenAI competence directly contributes to improved performance, digital leadership practices within schools enable the application of these competencies in instructional contexts. This supports the present study's finding that digital leadership practices partially mediate, facilitating the transformation of teachers' GenAI competencies into improved teaching performance.

Moderation Analysis of Professional Profile on the Relationship Between Teachers' Generative AI Competence and Teacher Performance

Teachers' professional profiles, whether personal or work-related, when put to the test, their moderating effect resulted in statistically non-significant moderating effect. These findings are consistent with existing literature on demographic and professional profiles in relation to digital and AI competences. Berber et al. (2023) reported that gender did not significantly predict digital competences among Turkish academics, whereas Xu et al. (2024) found that, among Chinese University educators, gender has no moderating effect on AI acceptance. Similarly, Lérias et al. (2024) observed no correlation between gender and AI literacy levels among Portuguese Polytechnic teachers.

Regarding teaching experience and AI Competence, Ghimire et al. (2024), at a research university in the United States, found that teaching experience length did not significantly influence familiarity with or acceptance of generative AI tools, regardless of tenure. Findings on age are equally diverse. According to studies by Al-Riyami et al. (2023), Zhang & Villanueva (2023), and Berber et al. (2023), younger teachers, typically under 30 years old, tend to demonstrate higher digital competence toward technology adoption. Zhang and Villanueva (2023) noted that 21–30-year-old teachers demonstrated higher digital competence.

Table 8. *Moderating Effect of the Performance Rating of the Respondents on the Relationship Between Teachers' Generative AI Competence and Teacher Performance*

Moderation Estimates						
	Estimate	SE	95% Confidence Interval		Z	p
			Lower	Upper		
GAIComp	0.617	0.039	0.541	0.693	15.858	<.001
Rating	-0.051	0.025	-0.100	-0.002	-2.035	.042
GAIComp * Rating	-0.010	0.047	-0.102	0.083	-0.204	.838

Table 8 presents the moderating effect of respondents' performance ratings on the relationship between teachers' generative AI competence and teacher performance. The findings indicate that performance ratings do not significantly moderate the relationship between teachers' GenAI competence and their performance. While GenAI competence shows a strong and positive main effect on teacher performance ($\beta = 0.617$, 95% CI [0.541, 0.693], $z = 15.858$, $p < .001$), and performance rating itself has a small but significant negative main effect ($\beta = -0.051$, 95% CI [-0.100, -0.002], $z = -2.035$, $p = .042$), the interaction term between GenAI competence and performance rating is not significant ($\beta = -0.010$, 95% CI [-0.102, 0.083], $z = -0.204$, $p = .838$). This indicates that the positive effect of GenAI competence on teacher performance is consistent across performance rating levels and does not meaningfully differ depending on whether teachers have higher or lower prior ratings. The findings show that profiles do not limit GenAI adoption; these competencies should be viewed as an equitable standard. Conversely, the findings might also suggest that while individual characteristics do not moderate, contextual factors like school culture, access to resources, etc., might.

In practice, this suggests that investing in GenAI competence benefits all teachers, regardless of current performance, reinforcing the idea that GenAI skills are a universal capability rather than something that benefits only high-performing teachers. These results may also show that GenAI competence is an "equitable" skill that any teacher can master, regardless of background, with strong digital leadership. However, the small negative main effect of performance rating suggests that contextual or evaluative factors associated with ratings may slightly constrain performance gains, highlighting the need for supportive, developmental use of performance evaluations alongside GenAI capacity-building initiatives. According to the UNESCO AI Competency Framework for Teachers (UNESCO, 2024), AI literacy development must be inclusive and equitable, considering different social and demographic groups. This suggests AI competency development must consider how factors such as gender, age, and experience shape engagement with technology.

Proposed Pathways Design Based on the Results of the Study

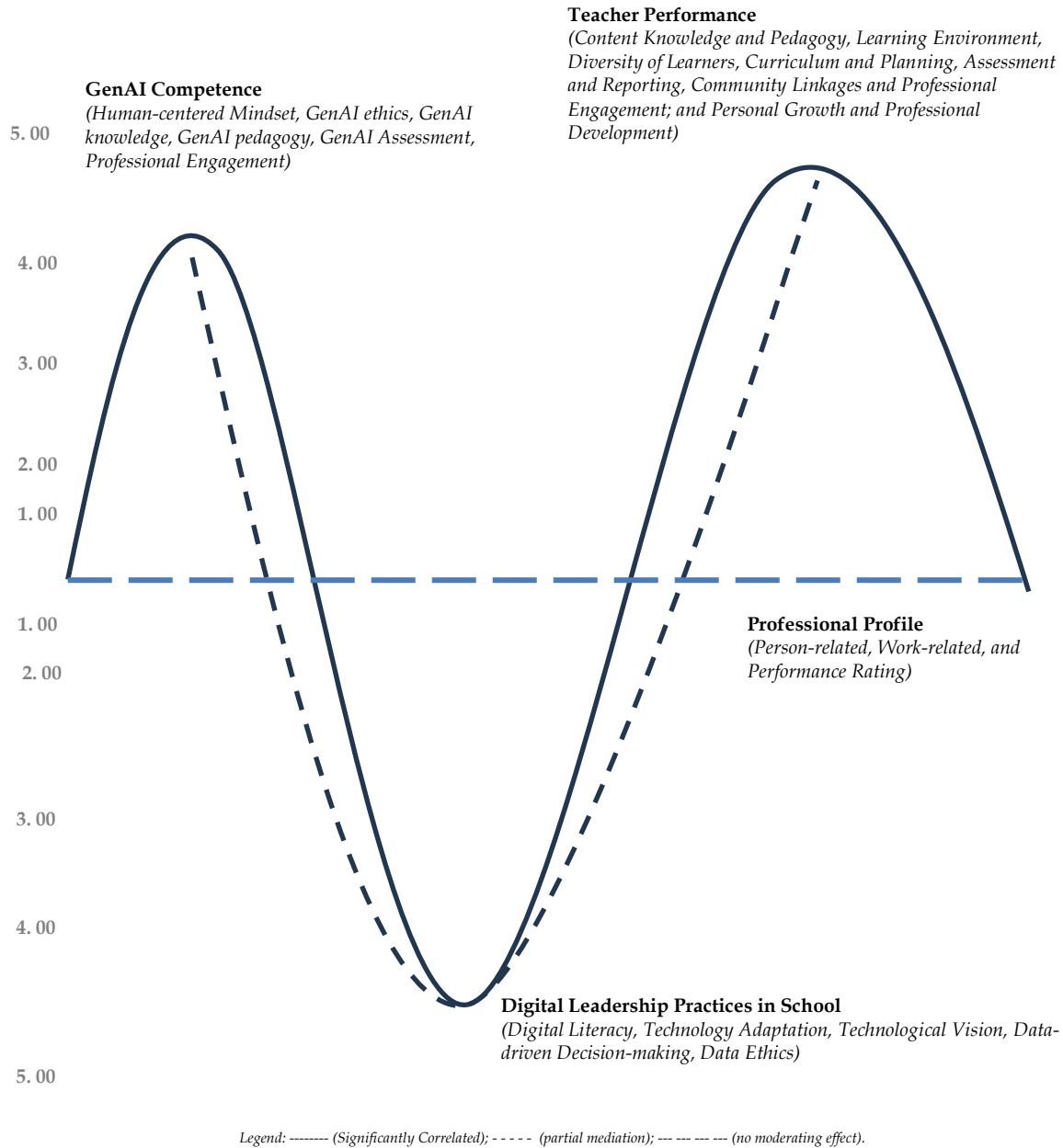


Figure 5. GenAI Competence–Digital Leadership Pathways Model for Teacher Performance

The proposed pathway design presents an empirical framework explaining how teachers' competencies in generative artificial intelligence and digital leadership practices in schools interact to influence teacher performance. Conceptually, the model reflects a two-dimensional positive interaction system, in which the individual competence dimension and the organizational leadership dimension work in tandem to produce effective teacher performance without negative interactions.

In the model, teachers' GenAI competence serves as the primary input variable and is described through the dimensions of human-centered mindset, GenAI ethics, GenAI knowledge, GenAI pedagogy, GenAI assessments, and professional engagement in teaching and learning processes. Teachers' GenAI Competence functions as the foundational construct that initiates the pathway toward effective teacher performance. The Pathway design suggests that teachers with high levels of competence in Generative Artificial Intelligence (GenAI) are better able

to integrate AI technologies into teaching, curriculum, and planning; conduct technology-supported assessments; and engage in continuous professional collaboration, all of which are associated with improved teacher performance.

The pathway design also indicates that GenAI competence is significantly associated with digital leadership practices in school, suggesting that teachers competent in GenAI are more likely to contribute effectively in digitally inclined school environments and engage positively in leadership initiatives that highlight technology integration. Digital leadership practices in the pathway design include digital literacy, technology adaptation, technological vision, data-driven decision-making, and data ethics, which collectively represent the institutional support system and leadership structures that drive the adoption and implementation of emerging technologies in schools.

These digital leadership practices serve as a crucial organizational mechanism that helps school leaders and teachers apply their technological competencies in educational settings. The pathway design also underscores that digital leadership practices in schools are significantly related to teacher performance, indicating that when school leadership sets a clear technological vision, supports innovation, and encourages ethical use of data, teachers are better equipped to meet effective performance and professional standards. Teacher performance serves as the ultimate outcome variable. It is operationalized through the seven domains aligned with the Philippine Professional Standards for Teachers (PPST), namely content knowledge and pedagogy, learning environment, diversity of learners, curriculum and planning, assessment and reporting, community linkages and professional engagement, and personal growth and professional development, which represent comprehensive indicators of effective teaching performance within the Philippine educational setting.

A critical feature of the pathway design is that digital leadership practices in school partially mediate the relationship between Generative Artificial Intelligence (GenAI) competence and teacher performance. This means that GenAI competence influences teacher performance both directly and indirectly through digital leadership practices in school. The pathway design highlights that while teachers' individual GenAI competence contributes to their performance, its influence becomes more substantial when supported by digital leadership practices. Thus, digital leadership practices strengthen the impact of teachers' GenAI competencies on teacher performance. This also suggests that private secondary schools need to provide capacity-building and professional development programs that strengthen digital leadership behaviors and practices, highlighting the critical role of aligning teacher capacity development with institutional leadership strategies.

The pathway design also incorporates the respondents' professional profiles as a moderating variable. Because professional profile does not moderate the relationship between GenAI competence and teacher performance, this pathway design suggests viewing GenAI competence and digital leadership practices as equitable skills and behaviors. The absence of a significant moderating effect reinforces that GenAI competence functions as an equitably beneficial professional capability for teachers, meaning that its impact on teacher performance remains consistent across different teacher profiles. Thus, the pathway design suggests that capacity-building and professional development programs should be inclusive and equitable for teachers, regardless of their profiles. Collectively, the *GenAI Competence–Digital Leadership Pathways Model for Teacher Performance* shows that strengthening teachers' GenAI competencies alongside fostering strong digital leadership practices in schools is a strategic pathway to effective teacher performance in the era of artificial intelligence-driven education.

Conclusion

The findings underscore that teachers' Generative Artificial Intelligence (GenAI) competence significantly contributes to teachers' performance and drives digital practices in schools, which in turn enhances professional performance. Hence, the impact of these GenAI competencies is strengthened when schools demonstrate strong leadership practices that promote digital literacy, technology integration, and professional learning. The findings further support the conclusion that digital leadership is a transformative institutional mechanism that strengthens the translation of individual GenAI competence into improved performance. Conversely, findings revealed that profiles do not limit GenAI adoption; these competencies should be viewed as an equitable standard regardless of teachers' demographic and professional characteristics. These findings extend the assumptions of technology adoption frameworks, such as the Technology Acceptance Model (TAM), by emphasizing that individual technological competence is strengthened and maximized when supported by digitally supportive school

leadership and environments.

Based on these findings, school administrators should strengthen institutional programs by fostering a shared technological vision, investing in resources, and providing capacity-building programs to sustain digital innovation. The study proposes a pathway design to help school leaders align these capacity-building strategies and programs with teacher performance. Teachers should engage in continuous professional learning, specifically focusing on GenAI-supported strategies, including prompt engineering, AI-assisted lesson planning, AI-supported assessment design, ethical AI use, data-informed instructional decision-making, and the responsible integration of GenAI tools in teaching and learning. Finally, future researchers may conduct a qualitative study to examine challenges, practices, and experiences with GenAI.

Contributions of Authors

Author 1: conceptualization, research design, data collection, data analysis, drafting, and manuscript revision

Author 2: study supervision, methodological validation, data interpretation, critical review, and manuscript revision

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Conflict of Interests

The authors declare no conflict of interest.

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